

The Siemens logo is displayed in a white box in the top left corner of the page.

[siemens.com/mobility/locomotives](http://siemens.com/mobility/locomotives)

# Amtrak City Sprinter Class ACS64 Electric Locomotive

For Amtrak's North East Corridor (NEC) High Speed Passenger Service

In October 2010 the National Passenger Railroad Corporation of the United States, Amtrak ordered 70 new high speed electric passenger locomotives from Siemens for service on the NEC between Boston and Washington D.C.

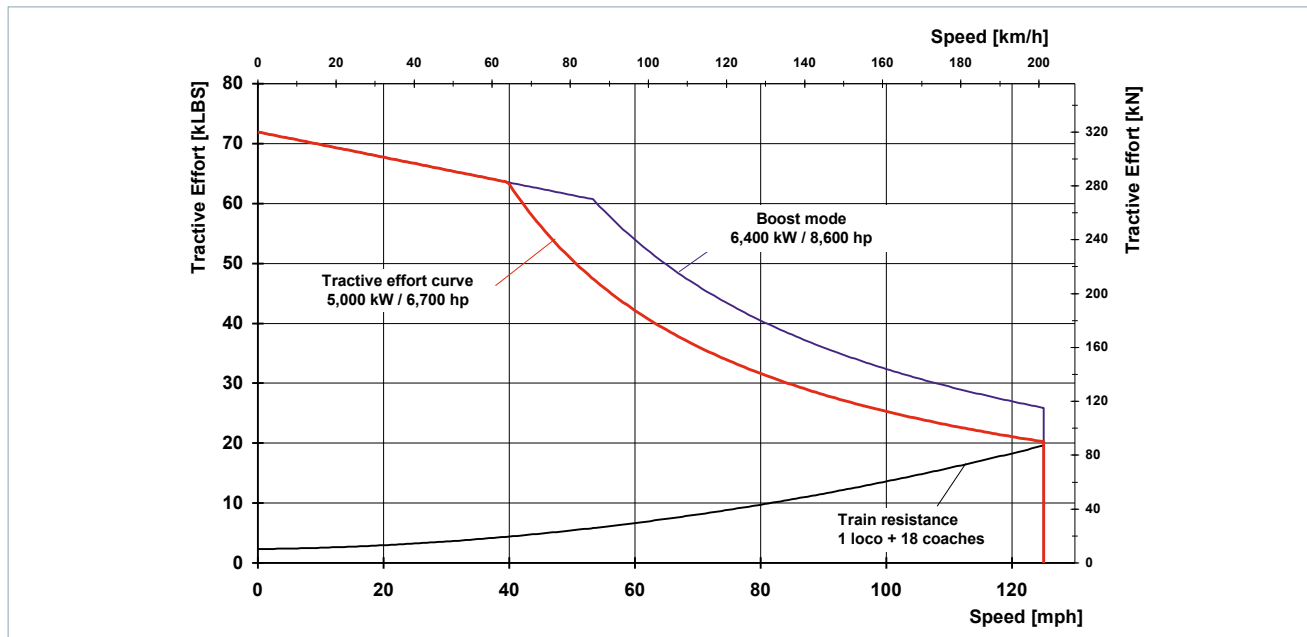
This locomotive, the Amtrak City Sprinter ACS64 is a development of Siemens' successful Eurosprinter locomotive, adapted to fit the needs of the North American passenger rail market for speeds up to 125 mph.

The locomotive is designed to be FRA compliant. The truck is an enhanced version of the SF4 for Siemens new European Vectron locomotive and the monocoque carbody is enforced to fulfil the requirements for higher buff strength and AAR Crash-Compliance. The electrical traction control system is based on standard components of the proven designs of Siemens electric locomotives.

The locomotives will be designed in Germany and Austria and manufactured at the Siemens plant in Sacramento, California. Major components of the traction system will be built at Siemens plants in Alpharetta, Georgia and Norwood, Ohio. This will be the first complete transfer of a high speed electric locomotive to the US.

## Technical data

Wheel arrangement	Bo'Bo'
Weight	215,537 pounds / 97 t
Length	approx. 800 in / 20,320 mm
Width (incl. handrails)	approx. 117.5 in / 2,984 mm
Height (without pantograph)	approx. 150 in / 3,810 mm
Distance between truck centers	approx. 390 in / 9,900 mm
Wheel diameter (new / worn)	44 / 41 in 1,117 / 1,041 mm
Maximum speed	125 mph / 200 km/h
Catenary voltage & frequency	25 / 12.5 kV 60 Hz 12 kV 25 Hz
Rated power	6,400 kW max. 5,000 kW cont.
Head End Power	1,000 kVA
Tractive effort (max.)	72 klbs / 320 kN
Minimum curve radius	250 ft / 76 m



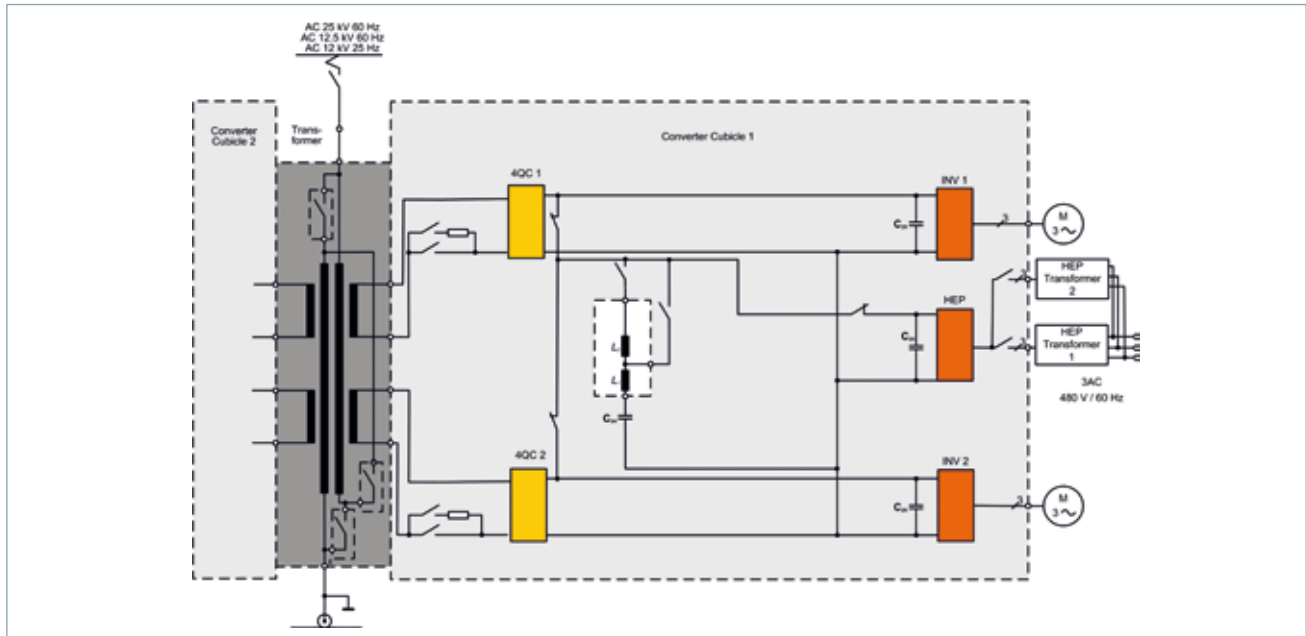
To compliment the Acela High Speed trains on the NEC, the locomotive has excellent acceleration capabilities and reaches a max. speed of 125 mph with 18 Amfleet coaches while at the same time providing up to 1 MVA of HEP power. The electrical brake system of the ACS64 can feed up to 100% of train brake energy back into the catenary system, provided the grid can accept all the power. Energy feed-back into the catenary system can sum up to 10–15% energy savings per year and thus help significantly reduce CO<sub>2</sub> emissions.



The carbody is designed to allow compression forces up to 3,5 MN (buff load = 800,000 lbs). It is equipped with a Crash Energy Management (CEM) system that provides enhanced safety for the crews, consisting of an AAR F-Type coupler with pushback mechanism and crash elements.

The engine room layout is similar to the European Vectron locomotive and most of the electrical components are designed identical. This practice provides the customer with the benefits of a design proven under various operating conditions in applications worldwide.

Cab and engineer's desk are designed to meet the expectations of Amtrak's Brotherhood of Engineers Cab Committee. The right side arrangement will be adapted from the European Vectron design to suit the specific North American requirements. A locomotive audio / video digital recorder system is installed. Fridge, locker and space for baggage for the engineer's convenience are located at the back of the cab as well as a flip seat, emergency equipment and a waste receptacle. Side windows with mirrors and rearview looking cameras enable the engineer to safely control the passenger platform.



Traction and locomotive control are managed by the proven Sibas 32 control system. The core of the control system is the Multi-Vehicle-Bus (MVB), interfacing with the subsystem control computers, all the I/O stations as well as the Man-Machine-Interfaces such as controls and displays on the engineer's console.

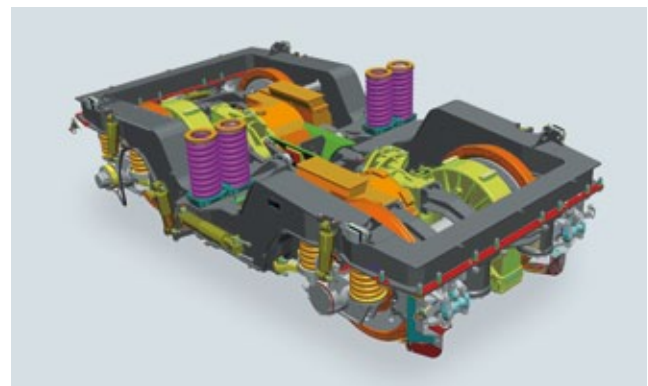
State of the art installation of the ACSSES control unit, including Train Radio, Automatic Train – and Positive Train Control are key features.

Locomotives connected in multiple unit and passenger coaches interface via the standard 27pin MU- trainlines. Optionally, a Wired Train Bus (WTB) interface for all train communications can be installed.

The electrical main diagram displays one half of the locomotive traction control system. It consists of two cubicles, each containing the components for one truck and the HEP supply – using water cooled inverters with IGBT power semiconductors. Two output inverters are connected to the two AC traction motors of one truck. Additionally, each DC link of one inverter cubicle supplies power to one HEP inverter, thus providing 100% redundant train power supply to the passenger coaches.

The truck arrangement is a center pin design with a low mount to the carbody. The frame is a welded structure which integrates all connecting points for the traction arrangement, drive units and truck brake equipment.

Primary and secondary suspension springs are of the Flexicoil type – a proven design installed in hundreds of Siemens trucks. Triangular Tie Rod assures stable wheel set guidance. Use of pivot elements and lateral mounting of secondary suspension springs significantly reduces the rotation stiffness of the truck, resulting in considerable reduction of wheel and rail wear.





The propulsion unit consists of a pinion hollow shaft drive with the traction motor mounted directly to the truck frame by rubber elements. The gear is axle mounted riding on the wheel set with the other side mounted to the motor case by a reaction rod.

Two multiple disc clutches are installed between traction motor and gear to allow movements between these two components. One clutch is located directly between motor and hollow shaft, the second clutch is located between hollow shaft and pinion.

The complete drive system is designed with sufficient clearance to the surrounding truck for operation, maintenance and repair. The components of the drive unit can be exchanged separately without disassembling the truck – a great advantage for the maintainer as the units return faster to revenue service after repair.





# News Release



FOR IMMEDIATE RELEASE  
October 29, 2010

ATK-10-141a  
Contact: Media Relations  
202 906.3860

## **AMTRAK AWARDS \$466 MILLION CONTRACT FOR 70 NEW ELECTRIC LOCOMOTIVES**

**Improved performance and reliability for Northeast passenger rail services**

SACRAMENTO, Calif. – As part of a comprehensive plan to modernize and expand its fleet of equipment, Amtrak is buying 70 new electric locomotives to provide improved performance and reliability for its Northeast intercity passenger rail services. The six-year, \$466 million contract was awarded to Siemens and will create 250 jobs primarily at a facility in Sacramento, California, but also at plants in Norwood, Ohio and Alpharetta, Georgia.

“Amtrak is a critical transportation provider in the Northeast and modern locomotives are essential to meet the service reliability expectations of our passengers and for us to handle the growing ridership demand in the coming years,” said President and CEO Joseph Boardman.

Boardman explained the first Amtrak Cities Sprinter ACS-64 electric locomotive is to be delivered in February 2013 and will operate at speeds up to 125 mph (201 kph) on the Northeast Corridor from Washington, D.C. to Boston and up to 110 mph (177 kph) on the Keystone Corridor from Philadelphia to Harrisburg, Pa. They will replace locomotives in service between 20 and 30 years with average mileage of 3.5 million miles traveled.

“Amtrak’s order for 70 new electric locomotives will not only create new manufacturing jobs, it supports the Department of Transportation’s strategy to use transportation to build the infrastructure needed to support a modern growing economy, while helping make our cities more livable, improve the environment and reduce our dependence on foreign oil,” said Joseph C. Szabo, Federal Railroad Administrator. “This new equipment will go far in meeting the rapidly growing demand for intercity passenger rail service in the Northeast.”

“As the global leader in rail innovation, we are thrilled that Amtrak has selected our proven locomotive technology which will create 250 green manufacturing jobs in the United States,” said Daryl Dulaney, president and CEO, Siemens Industry, Inc. “These locomotives will

- more -

be built in America using renewable energy and provide cleaner, more efficient movement of people on the most heavily traveled rail route in the country.”

The new Amtrak locomotive meets the latest federal safety regulations and includes additional safety features not yet required such as crash energy management components like anti-climbing technology and push-back couplers designed to keep the train upright, inline and on the tracks in the event of a collision. The design also allows for easier maintenance leading to faster turn around times and increased availability of locomotives for service.

In addition, the new locomotives will be more energy efficient and will replace older units that presently do not have regenerative braking systems that can automatically return electricity to the power grid.

As the new units come into service, Amtrak plans first to retire all current 20 DC AEM-7 electric locomotives in its fleet, followed by replacement of all 29 AC AEM-7 units. The remaining 21 locomotives of the order will be used to replace all 15 HHP-8 locomotives with the additional units supporting anticipated service expansion.

Boardman added in February 2010 Amtrak released an ambitious, long-term [Fleet Strategy Plan](#) to replace aging and outdated locomotives and passenger cars in order to enhance operations, attract more riders, reduce maintenance costs and delays, improve on-time performance and expand services on current and new routes. The report lays out the basis for recapitalizing the entire fleet over a period of time in a manner that will not only provide new and modern equipment for passengers, but will also develop and sustain the domestic production capacity needed for the long term viability of intercity passenger rail in the United States.

The new 70 electric locomotives are a key element of that plan and is the second major equipment procurement undertaken since July 2010 when Amtrak announced the award of a \$298 million contract to build 130 single-level passenger rail cars to support growing ridership on its long-distance trains.

### **About Amtrak**

As the nation’s intercity passenger rail operator, Amtrak connects America in safer, greener and healthier ways. Last fiscal year (FY 2010), the railroad carried over 28.7 million passengers, making it the best year in the company’s history. With 21,000 route miles in 46 states, the

District of Columbia and three Canadian provinces, Amtrak operates more than 300 trains each day—at speeds up to 150 mph (241 kph)—to more than 500 destinations. Amtrak also is the partner of choice for state-supported corridor services in 15 states and for several commuter rail agencies. Visit [Amtrak.com](http://Amtrak.com) or call 800-USA-RAIL for schedules, fares and more information.

### **About Siemens**

Siemens AG (NYSE: SI) is a global powerhouse in electronics and electrical engineering, and operates in the industry, energy and healthcare sectors. For more than 160 years, Siemens has built a reputation for leading-edge innovation and the quality of its products, services and solutions. With 405,000 employees in 190 countries, Siemens reported worldwide revenue of \$104.3 billion in fiscal 2009. Siemens in the USA reported revenue of \$21.3 billion and employs approximately 64,000 people throughout all 50 states and Puerto Rico. For more information on Siemens in the United States, visit [www.usa.siemens.com](http://www.usa.siemens.com)

A division of Siemens Industry, Inc. (SII), Siemens Mobility (MO) Division is North America's leading provider of transportation and logistics solutions. Using its "Complete mobility" approach, the division focuses on networking various modes of transportation to maximize the most efficient transport of people and goods. "Complete mobility" includes operations control systems for railways, roadway traffic control systems, airport logistics solutions, postal automation, traction power supplies, rolling stock for mass transit, regional and mainline services, turnkey systems as well as forward-looking service concepts. The Mobility Division posted worldwide revenues of \$8.8 billion in fiscal year 2009. [www.usa.siemens.com/mobility](http://www.usa.siemens.com/mobility)

# (rendering attached) #



Rendering of Amtrak Cities Sprinter ACS-64 electric locomotive, to be produced by Siemens.



FOR IMMEDIATE RELEASE:  
May 13, 2013, 5 AM ET

ATK-13-039  
Media Contact:  
Amtrak: 202 906.3860  
Siemens: 917 622.2413

## AMTRAK UNVEILS ADVANCED TECHNOLOGY LOCOMOTIVES FOR NORTHEAST SERVICE

Siemens-built equipment to improve reliability, efficiency and mobility

WASHINGTON – A new era of more reliable and energy efficient [Amtrak](#) service for Northeast intercity rail passengers is coming down the tracks as the first of 70 advanced technology electric locomotives being built by Siemens begin rolling off the assembly line today. The first units of the \$466 million order will be field tested this summer for entry into revenue service in the fall.

“The new Amtrak locomotives will help power the economic future of the Northeast region, provide more reliable and efficient service for passengers and support the rebirth of rail manufacturing in America,” said Amtrak President and CEO Joseph Boardman. “Built on the West Coast for service in the Northeast with suppliers from many states, businesses and workers from across the country are helping to modernize the locomotive fleet of America’s Railroad.”

Using Siemens’ innovative and proven rail technology, the Amtrak Cities Sprinter (ACS-64) locomotives are being assembled in Siemens’ Sacramento, Calif., rail manufacturing plant powered by renewable energy, with parts built from its plants in Norwood, Ohio, Alpharetta, Ga., and Richland, Miss., and nearly 70 suppliers, representing more than 60 cities and 23 states.

The new locomotives will operate on *Northeast Regional* trains at speeds up to 125 mph on the Northeast Corridor (NEC) along the Washington – New York – Boston route and on *Keystone Service* trains at speeds up to 110 mph on the Keystone Corridor from Philadelphia to Harrisburg, Pa. In addition, all long-distance trains operating on the NEC will be powered by the new locomotives.

“More and more Americans are parking their cars and choosing the comfort and convenience of trains, metros and streetcars as their preferred way of traveling. We’re proud of the innovations we’ve brought to passengers and commuters to expand their transportation options” said Michael Cahill, president of Siemens Rail Systems division in the U.S. “From

– more –

**NATIONAL RAILROAD PASSENGER CORPORATION**

60 Massachusetts Avenue, NE, Washington DC 20002 tel 202 906.3860 fax 202 906.3306 [mediarelations@amtrak.com](mailto:mediarelations@amtrak.com)

downtown streetcar systems to regional, passenger rail lines, Siemens' transportation solutions like the next-generation Amtrak locomotives enhance safety, boost efficiency and performance, and are built in America leveraging Siemens' U.S. manufacturing hubs and supply chain."

The new locomotives are designed for easier maintenance, will improve energy efficiency by using a regenerative braking system that will feed energy back into the power grid and will enhance mobility for the people, businesses and economy of the entire Northeast region. They also meet the latest federal rail safety regulations.

"We are committed to connecting people, communities and jobs. This project does all three," said Karen Hedlund, Deputy Federal Railroad Administrator. "Investing in manufacturing these 70 new locomotives are creating and preserving jobs in 60 cities across the country while meeting the growing demand for improved reliability and service along the Northeast and Keystone Corridors."

The first three locomotives will undergo a comprehensive testing program this summer, including two at a U.S. Department of Transportation facility in Pueblo, Colo., and one on the NEC. Once they are commissioned, production of the remaining units will ramp up for monthly delivery through 2016.

The new locomotives are part of a comprehensive Amtrak Fleet Strategy Plan to modernize and expand its equipment. The new units will replace electric locomotives that have between 25 and 35 years of service and average mileage of more than 3.5 million miles traveled with some approaching 4.5 million miles.

#### **About Amtrak®**

Amtrak is America's Railroad®, the nation's intercity passenger rail service and its high-speed rail operator. A record 31.2 million passengers traveled on Amtrak in FY 2012 on more than 300 daily trains – at speeds up to 150 mph (241 kph) – that connect 46 states, the District of Columbia and three Canadian Provinces. Amtrak operates intercity trains in partnership with 15 states and contracts with 13 commuter rail agencies to provide a variety of services. Enjoy the journey® at Amtrak.com or call 800-USA-RAIL for schedules, fares and more information. Join us on facebook.com/Amtrak and follow us at twitter.com/Amtrak.

#### **About Siemens Rail Systems**

Siemens designs and manufactures the entire spectrum of rolling stock including commuter and regional passenger trains, light rail and streetcars, metros, locomotives and high-speed train sets. Siemens is a top rail supplier in the U.S. providing rail vehicles, locomotives, components and systems for cities such as Denver, Salt Lake, Minneapolis, Houston, Portland, Boston, Sacramento, San Diego, St. Louis, Atlanta and Charlotte.

# attachment #

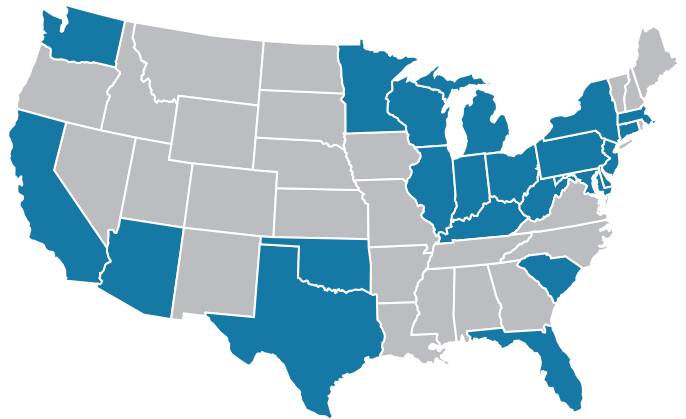
Note: Photos and video available at <http://inr.synapticdigital.com/siemens/NewAmtrakCars>

# AMTRAK CITIES SPRINTER:

## Built across America by Siemens



Siemens and 69 local manufacturers in 23 states are part of a national community building state-of-the-art ACS-64 locomotives.



■ States with Factories Contributing to ACS-64

The next era of high-performance, energy-efficient locomotives will enable Amtrak to provide improved performance, reliability and mobility for regional and intercity routes along the country's heavily-traveled Northeast and Keystone Corridors.

A true "Made in America" manufacturing and technology transfer story, Siemens—a global leader in rail innovation—is producing the locomotives at its solar-powered rail manufacturing plant in Sacramento, California, with major components sourced from suppliers in 61 cities from 23 states.



**70 new locomotives**

new locomotives are replacing ones that have been in service more than 25 years



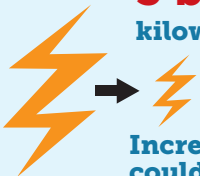
Building the ACS-64 is providing work for:

**69** suppliers

**23** states

**61** cities

The 70 new locomotives could save over  
**3 billion**  
kilowatt hours of energy.



Increased energy efficiency could result in more than  
**\$300 million**  
in savings over 20 years.



Regenerative braking can feed up to

**100%**

of the energy generated during braking back to the power grid



# AMTRAK CITIES SPRINTER:

## *Delivering New Benefits and Features*

This fall Amtrak will begin using new ACS-64 locomotives in the northeast region.

### DIVERSE BENEFITS

#### Reliability

The new equipment will be replacing locomotives that have **been in service between 25 and 35 years** with average mileage of more than 3.5 million miles traveled. In total, the current fleet has traveled more than 200 million miles.

#### Efficiency

The 70 new locomotives will be easier to maintain and more energy efficient using regenerative braking to feed energy back into the power grid. Operated as designed, the 70 locomotives could collectively **save over 3 billion kilowatt hours of energy**. This translates to more than \$300 million in savings over 20 years.

#### Mobility

The new Amtrak Cities Sprinter (ACS-64) locomotives will operate on **Northeast Regional trains at speeds up to 125 mph** on the Northeast Corridor (NEC) along the Washington—New York—Boston route and on **Keystone Service trains at speeds up to 110 mph** on the Keystone Corridor from Philadelphia to Harrisburg, Pa. In addition, all long-distance trains operating on the NEC will be powered by the new locomotives.

#### Economic Growth

Amtrak is modernizing its equipment fleet to meet growing demand and help America compete in the global marketplace. **The new locomotives will power the economic future of the Northeast region beginning this fall** when they enter revenue service on one of the busiest rail segments in the world.

### STATE-OF-THE-ART FEATURES

#### Power

The ACS-64 locomotive will have a peak of 8,600 horsepower (6.4 MW) with excellent acceleration capabilities to attain revenue service **speeds of 125 mph pulling up to 18 Amfleet coach cars**, while at the same time providing up to 1,000 kVA (1 MVA) of head-end power for auxiliary train equipment such as interior lights, electrical outlets and air conditioning and heating for passengers.

#### Regenerative Braking

The electro-dynamic brake system of the ACS-64 has the ability to put a maximum of 5 MW of electricity back into the catenary during regenerative braking. The regenerative braking can feed up to 100 percent of the energy generated during braking **back to the power grid**.

#### Safety

The Amtrak-specific design meets the latest Federal Railroad Administration (FRA) safety requirements including **crash energy management components** like front-end strength and a crumple zone for collision with large objects, in addition to an enhanced safety cage, push back couplers and anti-climber functionality.

#### Maintenance

The ACS-64 locomotive has been designed for **improved safety and reliability**. Its enhanced design also allows for more efficient maintenance to ensure locomotives are returned to service as quickly as possible.

#### Smart Technology

The state-of-the-art microprocessor system installed in the locomotive allows for **self-diagnosis of technical issues**. The on-board computer system can notify the engineer and operator of any maintenance issues and can take self-corrective action to maintain operation of the locomotive and ensure safety. For example, the computer may identify a technical issue and can automatically notify the engineer, switch to a back-up or redundant system or decrease speed and operational performance if necessary.

#### Redundancy

The ACS-64 is based on Siemens' newest platform, the Vectron. For example, dual, auxiliary inverters provide redundancy to ensure that **heating and cooling systems, lighting and door systems** remain in service should one inverter fail.

*"nearly 70  
suppliers,  
representing  
more than  
60 cities and  
23 states."*

## SUPPLIERS

The Amtrak locomotives are being assembled at the **Siemens Sacramento, Calif., rail manufacturing plant** powered by renewable energy, with parts built from its plants in Norwood, Ohio, Alpharetta, Ga., and Richland, Miss., and nearly 70 suppliers, representing more than 60 cities and 23 states. The locomotives are being built in excess of Amtrak's Buy American standards which require 51% of components come from "local" or U.S. suppliers.

## FLEET PLAN

The new locomotives are part of Amtrak's comprehensive Fleet Strategy Plan to **modernize and add equipment** while providing improved performance and reliability for intercity passenger rail services throughout the Northeast.

## TESTING PROGRAM

The first three locomotives will undergo comprehensive testing this summer. Two will be tested at the U.S. Department of Transportation facility in Pueblo, Colo., and one on the Northeast Corridor. **The locomotives will go through a variety of tests** including ride quality, maximum speed and diagnostics.

## PRODUCTION SCHEDULE

Once commissioned, it is expected that the first locomotive will enter revenue service in **Fall 2013**. Production of the remaining units will subsequently ramp up for scheduled delivery of approximately two locomotives per month through 2016.

## CONTRACT DETAILS

In October, 2010, **Amtrak awarded a contract to Siemens Mobility** for production of 70 electric locomotives to support high-speed, commuter (push-pull) and long-distance service on the Northeast and Keystone Corridors. This \$466 million contract was financed with a FRA RRIF loan that will be repaid with NEC revenue.





- Main page
- Contents
- Featured content
- Current events
- Random article
- Donate to Wikipedia

- Interaction
  - Help
  - About Wikipedia
  - Community portal
  - Recent changes
  - Contact Wikipedia

- Toolbox
- Print/export

- Languages
  - Deutsch
  - Magyar
  - 中文

Article Talk Read Edit View history

Search

# Amtrak Cities Sprinter

From Wikipedia, the free encyclopedia

The **Amtrak Cities Sprinter**, or **ACS-64**, is an electric locomotive designed by [Siemens Mobility](#) for [Amtrak](#).

**Contents** [hide]

1 Order

2 Design

3 References

3.1 Sources

4 External links

## Order [edit]

In October 2010, Amtrak ordered 70 locomotives at a cost of **US\$**466 million, to be delivered beginning in February 2013.<sup>[7]</sup> In order to comply with "[Buy American](#)" laws, the locomotives will be manufactured at Siemens' factory in [Sacramento, California](#) ([Florin](#)) with traction and electrical equipment being manufactured at Siemens facilities in [Norcross](#) and [Alpharetta, Georgia](#).<sup>[5]</sup>

The locomotives are to operate on the [Northeast Corridor](#) (NEC) and the [Keystone Corridor](#) and replace the railroad's

Siemens ACS-64 Amtrak Cities Sprinter	
Power type	Electric
Builder	<a href="#">Siemens Mobility</a>
Order number	70
Build date	2012-
UIC classification	Bo'Bo'
Track gauge	1,435 mm (4 ft 8 1⁄2 in)
Wheel diameter	1,118 mm (44.02 in) (new), 1,041 mm (40.98 in) (worn) <sup>[1]</sup>
Minimum curve	76 m (249 ft 4.1 in) <sup>[1]</sup>
Wheelbase	9.9 m (32 ft 5.8 in) (bogie centre distance) <sup>[1]</sup>
Length	20.32 m (66 ft 8 in), <sup>[1]</sup>
Width	2,984 mm (9 ft 9.5 in) <sup>[1]</sup>
Height	3,810 mm (12 ft 6 in) (excluding pantograph) <sup>[1]</sup>

fleet of [AEM-7](#) and [HHP-8](#) locomotives.<sup>[8]</sup> Initially, the 20 [EMD AEM-7DC](#) units with [direct current traction motors](#) would be replaced, followed by the rebuilt 29 AEM-7ACs with [AC](#) propulsion, and lastly by the 15 [HHP-8](#) units.<sup>[8]</sup> The extra ACS-64s would be for expansion.<sup>[8]</sup> The order came was the second part of Amtrak's company-wide fleet-replacement program, after an order for 130 [Viewliner II](#) passenger cars was placed in July 2010.<sup>[9]</sup>

On June 30, 2011, US Secretary of Transportation [Ray LaHood](#) announced that Amtrak had received a [US\\$562.9 million](#) loan from the government's Railroad Rehabilitation and Improvement Financing program to finance the order for the new locomotives.<sup>[10]</sup>

Amtrak and Siemens Mobility unveiled the first three completed locomotives on May 13, 2013, in Sacramento, California. They will be tested during summer 2013—two at the [Transportation Technology Center](#) in Pueblo, CO, and one on the NEC—and will enter revenue service in fall 2013.<sup>[11][12][13]</sup>

## Design [\[edit\]](#)

The design is based on the [EuroSprinter](#) and the [Vectron](#) platforms,<sup>[14]</sup> the body is a [monocoque](#) structure with integral frames and sidewalls.<sup>[1]</sup> Significant structural changes to the design were made to comply with USA crash regulations (American Crash Standard AAR-580) including crumple zones, structural strengthening of the cab, and anti-climbing features; resulting in a heavier locomotive than European Eurosprinter/Vectron models.<sup>[1][5]</sup>

<b>Axle load</b>	24.25 t (23.87 long tons; 26.73 short tons)
<b>Locomotive weight</b>	approx. 97 t (95 long tons; 107 short tons) <sup>[2]</sup>
<b>Electric system(s)</b>	12 kV AC, 25 Hz / <a href="#">Overhead lines</a> 12.5 kV AC, 60 Hz / <a href="#">Overhead lines</a> 25 kV AC, 60 Hz / <a href="#">Overhead lines</a>
<b>Current collection method</b>	<a href="#">Pantograph</a>
<b>Traction motors</b>	Siemens built ( <a href="#">Norwood, Ohio</a> ) <sup>[3]</sup>
<b>Head end power</b>	1 megawatt (1,300 hp) three phase 60 Hz 480 V <sup>[2]</sup>
<b>Top speed</b>	125 mph (200 km/h) Service 135 mph (220 km/h) Design <sup>[4]</sup>
<b>Power output</b>	6,400 kW (8,600 hp)
<b>Tractive effort</b>	320 kN (72,000 lbf) Starting <sup>[2]</sup>
<b>Factor of adhesion</b>	2.972 (29.72%)
<b>Locomotive brake</b>	<a href="#">Regenerative braking</a>
<b>Train brakes</b>	<a href="#">Pneumatic</a> <sup>[<i>citation needed</i>]</sup>
<b>Safety systems</b>	<a href="#">FRA</a> standards <a href="#">ACSES II</a> <sup>[1]</sup>
<b>Delivered</b>	expected 2013- <sup>[5]</sup>

<b>Notes</b>
--------------

They will be able to operate from 25 kV 60 Hz, 12.5 kV 60 Hz, and 11 kV 25 Hz power supplies, and have a total power of 6.4 megawatts (8,600 hp).<sup>[14]</sup> The locomotives are designed to be capable of accelerating 18 Amfleet cars to maximum speeds as high as 125 mph (201 km/h) on the Northeast Corridor in a little over eight minutes.<sup>[15]</sup> They have advanced safety systems, including specialized [couplers](#) designed to keep trains from rolling over, jackknifing, or derailing during a collision.<sup>[9]</sup> Additionally, the new locomotives will be more energy-efficient than those that they replace, and will lack dynamic braking grids to favor 100% [regenerative braking](#), depending on grid receptiveness. Energy generated from the brake will also be utilized to meet HEP needs, further reducing current draw from the grid.<sup>[9]</sup>

The locomotive has two electrical converter units per loco, with three [IGBT](#) based, water cooled output inverters per converter unit. Two of the inverters power the traction motors; the third unit supplies head-end and auxiliary power.<sup>[1]</sup> The HEP/auxiliary inverters are dual-redundant and identical (rated 1,000 kW/1,300 hp), allowing the locomotive to remain in service should one inverter fail en route.<sup>[16]</sup> The locomotive bogies are fabricated steel designs, with low-lying traction links and center pivot pin. The traction motors are frame-mounted, with torque transmitted via a hollow shaft drive. Locomotive braking will be facilitated by disc brakes mounted on each wheel.<sup>[1]</sup>

Sources: <sup>[5]</sup><sup>[6]</sup> except where noted

## References [\[edit\]](#)

- <sup>^</sup> [a b c d e f g h i j k](#) "A new face in the Northeast Corridor: locomotive borrowing heavily from the proven Eurosprinter and more recent Vectron designs, Siemens Mobility is adapting European electric locomotive technology to produce the ACS64 'Amtrak Cities Sprinter' for North America's busiest inter-city passenger route" [↗](#), *Railway Gazette International*, 1 September 2011
- <sup>^</sup> [a b c](#) "Highspeed Passenger Locomotive Amtrak Cities Sprinter ACS64" [↗](#). Siemens Mobility. Archived from the original [↗](#) on 22 February 2012. Retrieved 23 February 2012.
- <sup>^</sup> "DOT Announces \$562.9 Million AMTRAK Loan for 70 Locomotives to Run on Northeast Corridor" [↗](#), *www.dot.gov* (=United States Department of Transportation), 29 June 2011
- <sup>^</sup> "Siemens AG bags \$466-mn order from US railroad company Amtrak news" [↗](#), *www.domain-b.com*, 29 October 2010
- <sup>^</sup> [a b c d](#) "Amtrak orders Siemens 200 km/h Cities Sprinter locomotives" [↗](#), *www.railwaygazette.com* (*Railway Gazette International*), 29 October 2010, [archived](#) [↗](#) from the original on 1 November 2010,

retrieved 2010-10-30

6. ^ [Railway Age](#), June 2011, pp.30-32
7. ^ [Press release](#), Amtrak, 29 October 2010
8. ^ [a b c](#) "[Amtrak contracts Siemens to supply 70 electric locomotives](#)" [↗](#). Progressive Railroading. 29 October 2010. Retrieved 29 October 2010.
9. ^ [a b c](#) "[Amtrak orders 70 new electric locomotives from Siemens](#)" [↗](#). Trains Magazine. 29 October 2010. Retrieved 30 October 2010.
10. ^ "[Amtrak receives \\$562.9m loan to purchase 70 locomotives for Northeast Corridor](#)" [↗](#). Rail.co. 30 June 2011. Archived from [the original](#) [↗](#) on 30 June 2011. Retrieved 1 July 2011.
11. ^ <http://news.yahoo.com/amtrak-unveils-locomotives-replace-aging-174941862.htm> [↗](#) Amtrak unveils locomotives to replace aging fleet, Associated Press, published in Yahoo News on-line, May 13, 2013
12. ^ <http://inr.synapticdigital.com/siemens/NewAmtrakCars/> [↗](#) Siemens Provides First Look at New Amtrak Locomotives
13. ^ <http://www.amtrak.com/ccurl/898/720/Amtrak-Siemens-Locomotive-ATK-13-039.pdf> [↗](#) AMTRAK UNVEILS ADVANCED TECHNOLOGY LOCOMOTIVES FOR NORTHEAST SERVICE; Siemens-built equipment to improve reliability, efficiency and mobility
14. ^ [a b](#) "[Siemens breaks into the U.S. long-distance passenger rail market](#)" [↗](#). www.infrasite.net. 29 October 2010. Retrieved 2010-10-30.
15. ^ [Railway Age](#), June 2011, pp.30-31
16. ^ [Railway Age](#), June 2011, p.32

## Sources [\[edit\]](#)

- Michael Latour (June 2011), "[Amtrak ACS-64: Speed, power, efficiency](#)" [↗](#), *Railway Age*

## Press releases

- "[Siemens breaks into the U.S. long-distance passenger rail market](#)" [↗](#). *www.siemens.com* (Press release). [Siemens](#). 29 October 2010.
- "[AMTRAK AWARDS \\$466 MILLION CONTRACT FOR 70 NEW ELECTRIC LOCOMOTIVES](#)" [↗](#), *www.amtrak.com* ([Amtrak](#)), 29 October 2010, [alternative link via www.prnewswire.com](#) [↗](#)

## External links [\[edit\]](#)

- [In-cab photo taken at unveiling of locomotives on May 13th, 2013.](#)
- [Amtrak blog post detailing unveiling of locomotives on May 13th, 2013.](#)

V · T · E · <span>Amtrak rolling stock</span> <span>[hide]</span>	
<b>Railcars/Trainsets</b>	<a href="#">Amfleet</a> · <a href="#">Horizon</a> · <a href="#">Superliner</a> · <a href="#">View liner</a> · <a href="#">California Car and Surfliner</a> · <a href="#">Talgo</a> · <a href="#">Acela Express</a> · <a href="#">Heritage Fleet</a> · <a href="#">Auto Train Autorack</a> ·
<b>Diesel locomotives</b>	<a href="#">GE Genesis P40DC</a> · <a href="#">GE Genesis P42DC</a> · <a href="#">EMD F59PHI</a> · <a href="#">GE P32-8WH</a> · <a href="#">EMD GP38H-3</a> ·
<b>Dual-Mode locomotives</b>	<a href="#">GE Genesis P32AC-DM</a> ·
<b>Electric locomotives</b>	<a href="#">EMD AEM-7</a> · <a href="#">Bombardier HHP-8</a> · <b><i>Siemens ACS-64</i></b> <i>(on order)</i> ·
<b>Work locomotives</b>	<a href="#">EMD GP38</a> · <a href="#">EMD MP15</a> · <a href="#">EMD SW1</a> · <a href="#">EMD SW1000R</a> · <a href="#">EMD SW1001</a> · <a href="#">EMD SW1500</a> · <a href="#">GE 80t</a> · <a href="#">MPI GP15</a> · <a href="#">MPI MP14B</a> / <a href="#">MP21B</a> ·
<b>Former locomotives</b>	<b>Diesel</b> <a href="#">EMD E8</a> / <a href="#">E9</a> · <a href="#">EMD F3B</a> / <a href="#">F7</a> / <a href="#">FP7</a> · <a href="#">EMD SDP40F</a> · <a href="#">GE P30CH</a> · <a href="#">EMD F40PH</a> / <a href="#">F40PHR</a> · <a href="#">EMD F69PHAC</a> · <a href="#">Bombardier LRC</a> (trainset) · <a href="#">Budd RDC</a> (DMU) ·
	<b>Dual-Mode</b> <a href="#">EMD FL9</a> ·
	<b>Electric</b> <a href="#">PRR GG1</a> · <a href="#">GE E60</a> · <a href="#">Budd Metroliner</a> (EMU) ·
	<b>Gas Turbine</b> <a href="#">UAC TurboTrain</a> (trainset) · <a href="#">ANF/Rohr Turboliner</a> (trainset) ·
	<b>Work locomotives</b> <a href="#">ALCO RS-1</a> / <a href="#">RS-3</a> · <a href="#">ALCO S-2</a> · <a href="#">EMD CF7</a> · <a href="#">EMD GP7</a> / <a href="#">GP9</a> · <a href="#">EMD GP40</a> · <a href="#">EMD SSB1200</a> · <a href="#">EMD SW8</a> · <a href="#">GE 45t</a> / <a href="#">65t</a> · <a href="#">Railpower GG20B</a> · <a href="#">PRR E44</a> (electric) ·

Categories: [Bo-Bo locomotives](#) | [Siemens locomotives](#) | [25 kV AC locomotives](#) | [Amtrak rolling stock](#) | [Passenger locomotives](#) | [Electric locomotives of the United States](#) | [Railway locomotives introduced in 2010](#)

This page was last modified on 13 May 2013 at 22:38.

Text is available under the [Creative Commons Attribution-ShareAlike License](#); additional terms may apply. By using this site, you agree to the [Terms of Use](#) and [Privacy Policy](#).  
Wikipedia® is a registered trademark of the [Wikimedia Foundation, Inc.](#), a non-profit organization.